UNDERSTANDING THE STUDENS' ACADEMIC PERFORMANCE USING FLIPPED CLASSROOM MODEL

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ABSTRAK

Beberapa tahun terakhir menunjukan bahwa flipped classroom memiliki efek yang positif terhadap motivasi dan kemampuan akademis siswa. Di dalam artikel ini, peneliti menganalisis kemampuan siswa dalam menghadapi model pembelajaran yang baru ini. Terdapat 42 peserta dalam kegiatan penelitian ini. Hasilnya adalah ada perbedaan yang signifikan dalam perolehan nilai siswa. Nilai siswa di dalam kelompok eksperimen memiliki nilai yang lebih tinggi dibandingkan dengan siswa yang berada di kelompok control. Hal ini juga menunjukkan bahwa siswa juga puas dengan penggunaan model flipped classroom.

Kata Kunci: flipped classroom, perolehan nilai, pembelajaran blended

ABSTRACT

The flipped classroom has been shown in recent years to have a positive effect on students' motivation and academic performance. In this paper, the writer analyzes the students' attitude towards this new teaching-learning model. There were 42 participant in this research. The results of the study show that there was a significant difference between the students' achievement score. It was found that the scores for the students in the experimental groups with regard to academic achievement was higher than the scores for those in the control group. The differences between the both groups were statistically significant. It was revealed that the students were also generally satisfied with the flipped classroom model.

Keywords: flipped classroom, academic achievement,blended learning.

INTRODUCTION

Due to increased demand from parents and students for more productive programs and efficient teaching methods to achieve improved student outcomes, higher educational institutes around the world have been scrutinized to improve the quality of education. The use of digital technology and newer pedagogical approaches in higher education, which include new-age technology integrating online, blended, and flipped learning paradigms, has become increasingly popular globally to augment traditional educational models. In recent days, the students are multi taskers and digitally literate, thus favour and feel more comfortable towards innovated and stimulating teaching styles encompassing the latest technology in the classroom (Webb & Doman, 2020). As a result, the flipped model has shown to be a more flexible learning environment that allows English language educators and learners to properly grasp technology, resulting in a more student-centered approach combined with online learning.

The flipped classroom differs from traditional face-to-face learning in that students learn their lessons whenever and wherever they wish before arriving to school. As a result, teachers typically prepare their lesson content using digital assets and make these materials available to their students before to class. Students can access related lesson content through their teachers' directions, and the contents are communicated to them prior to lessons. The unclear, challenging, and difficult-to-internalize topics are noticed and posed to their teachers and classmates via the electronic media. The flipped classroom seeks to address students' cognitive differences in this way.

Students will have more time in the classroom to devote to activities and applications that support the issue, and they will engage in the teaching-learning process more effectively and efficiently. In this way, students are given new opportunities for subjects that are not taught in a classroom setting through flipped classroom technology. The pioneers of the flipped classroom method point out that this method is more than just video lessons; the main point in this method is the significant and interactive activities that take place during lessons (Bergman& Sams, 2012). The following are the concerns that are highlighted in the model's definitions: student-centered, encouraging active learning, extending class study time, using technological infrastructure to provide a richer and more flexible learning environment, and being a part of blended learning.

Many studies have shown that flipped classrooms have a significant impact and are beneficial in a variety of ways. Some studies have found that flipped classrooms are effective in increasing students' academic achievement levels (Vaezi, Afghari, & Lotfi, 2019; Hashemifardnia, Namaziandost, & Shafiee, 2018; Boyraz & Ocak, 2017), generating positive attitudes toward learning various types of materials (Al hamadani & Albreki, 2018; Choe & Seong, 2016; Lofnertz, 2016; Ev (Aycicek & Yelken, 2018).

This study evaluates the usefulness of the flipped classroom in boosting university undergraduates' level of knowledge of the subjects being taught to them during their academic courses, taking into account all of the benefits of the flipped classroom in teaching. The aim of this research is to analyze the effect of the flipped classroom on students' academic performance during pandemic era.

Bergman and Sams (2012) stated that the flipped classroom is a pedagogical model in which the instructor shares predetermined digital resources with students through a platform outside the classroom; related content is also taught asynchronously through this outside platform. Hence, before going to the class, students individually engage with content materials, often through prerecorded lectures, prescribed readings, study guides, interactive videos, simulations and cases, and in-class pedagogies such as interactive engagement, just-in-time teaching, and peer instruction (Berrett, 2012). They then build on the prepared learning to construct knowledge using, for example, presentations, discussions, role-plays, and debates (Abeysekera & Dawson, 2015; O'Flaherty & Phillips, 2015; Sohrabi & Iraj, 2016). The model's main objective is to work on the higher-level skills of Bloom's taxonomy (i.e., create, analyze, and evaluate) by making the student take a much more active role in their learning process (Berenguer, 2016). In short, flipped classroom is a learning strategy that changes learning patterns by providing video lectures related to basic knowledge of learning materials to be studied at home, and when at school, students can focus on deepening the material (Bergman & Sams, 2012). The flipped classroom paradigm will lead to more student-centered learning in the classroom.

Although the flipped classroom has many advantages, Goodwin and Miller (2013) point out that the evidence on the inverted model is still to come, realizing that there is currently no large scientific research indicating exactly how effective classrooms that follow this model are. Also, Fadol et al. (2018) consider that further studies on different subjects and instructional contexts are needed to obtain a better understanding of this new flipped classroom technique. Thus, with this work, we want to analyze this cause-effect relationship, i.e., why inverted classroom dynamics produce better results and what the reasons or causes are. Therefore, we analyze this causal relationship through the students' perception of different aspects of the classroom dynamics, their attitude, and their assessment of the degree of acquisition of content and expected results.

This study used a quasi-experimental research. The participants of this study were enrolled in two groups, namely: group A and group B in the second semester of the 2021/2022 academic year. Group A consists of 20 students were called the experimental class and group B consists of 22 students were called the control class. The instrument used in this research was achievement test.

DISCUSSION

Students' grades on the tests were documented and analysed once the course ended and they had completed their third test by the end of the academic semester. The needed comparisons between the students' academic success levels were made using mean scores, standard deviations, and a t test to see if there were any significant differences due to the use of either the flipped classroom or traditional teaching techniques.

Table 1 shows the details of the obtained data on students' grades in the accomplishment posttest in both groups.

Table 1: mean scores and standard deviaton of students'scores in the achievement of postest for both group

Group	N	Mean	Std. dev	Std. Error mean
Experimental Class	20	43.23	2.35	0.71
Control Class	22	36.12	3.25	0.88

From the table 1 above show that the mean score of students in the experimental class = 43.23 was higher than the students in the control class = 36.12. It means that the use of the flipped classroom give a significant difference in the experimental class. To see if this difference was significant, the researcher conducted a t-test and the results are presented in table 2.

Table 2. t-test result

Group	N	Mean	Std. dev	Mean difference	t	Sig.
Experimental class	20	43.23	2.35	7.11	3.682	0.000
Control class	22	36.12	3.25			

The t-test results in Table 2 indicate that the difference in mean achievement scores between the experimental and control groups was significant. The flipped classroom was responsible for the higher success level. Means that the use of flipped classroom model was more effective in students' achievement compared to traditional model.

DISCUSSION

Teachers and students should collaborate to determine learning objectives by including essential questions about what to achieve, how to resolve this achievement, and how to meet students' needs (Pina, 2018). Teachers must communicate to pupils what they will learn and do during the learning process (Reidsema, Kavanagh, Hadgraft, & Smith, 2017). Pina (2018) also mentioned that preconceptions have a role in selecting learning objectives. Learning procedures that involve teaching materials at the level of remembering and understanding the information that may be studied independently, as well as activity-based education to apply theory in the classroom, are appropriate for flipped classroom-based learning (Lai & Hwang,

2016). There is a consideration related to the material needs to create opportunities for encouraging learner autonomy and digital technology utilized in delivering material and doing the evaluation in the flipped classroom scenario.

The objective of this research was to identify the effect of using flipped classroom model in developing the students' academic performance compared with using the conventional or traditional model. The use of flipped classroom was effective in developing students' academic performance. The improvement can be linked to the teachers' and students' comprehension of how flipped classrooms work. Learning materials used in the flipped classroom appeal to many different sensory organs, and this can be effective in ensuring more permanent learning for students in the flipped classroom. The flipped classroom model is also a learning model that fulfils active learning processes for students (Bergman & Sams, 2012). Through this model, students are active participants, rather than a passive listeners in the teaching and learning process (King, 1993).

According to a review of the literature, just a few research have looked at the influence of the flipped classroom model on retention, and only a few studies have shown results that are similar to those of this study. Boyraz (2014) evaluated the retention scores of both traditional and flipped education groups, finding that the flipped education had a beneficial influence on academic success and retention. Similarly, Kim et al. (2014) found that flipped schooling improved retention and motivation.

CONCLUSION

The flipped classroom is a methodological model that reduces time spent in the classroom on the simplest cognitive processes (listening, reading, remembering …) to prioritize, through face-to-face teacher-student interaction, more complex cognitive processes based on activities such as debate, creation, or reciprocal teaching among students (Santiago & Bergmann, 2018). The inverted classroom model allows us experiment with other teaching and learning systems different from the traditional model.
Taking this into account, the aim of this study was to find out the effectiveness of flipped classroom in students' academic performance. The comparison between the students who taught usng flipped classroom and conventional model showed that the achievement for experimental group was higher than the control group, it means that the use of flipped classroom is more effective than conventional model.

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